

CLAIMS

1. A field-sequential type display device for performing a display by synchronizing successive switching of lights of a plurality of colors to be incident on an optical switching element from a light source with inputting of display data of each color corresponding to an image to be displayed into said optical switching element, comprising:

a light introducing unit for making light of a corresponding color from said light source incident on said optical switching element in synchronism with a start timing of display data writing scanning on said optical switching element for each color; and

an interrupting unit for interrupting the incidence of light of a corresponding color from said light source on said optical switching element in synchronism with an end timing of display data erasing scanning on said optical switching element for each color,

wherein a predetermined time is provided between an interruption timing of incidence of light of one color on said optical switching element and a start timing of incidence of light of the next color on said optical switching element.

2. The display device of claim 1, wherein

the predetermined time is equal to a time from an end timing of display data writing scanning on said optical switching

element to a start timing of display data erasing scanning on said optical switching element.

3. The display device of claim 1, wherein the lights of a plurality of colors to be incident on said optical switching element are red light, green light, and blue light.

4. The display device of claim 1, wherein the lights of a plurality of colors to be incident on said optical switching element are red light, green light, blue light, and white light.

5. The display device of claim 1, further comprising a control unit for controlling, based on display data, ON/OFF of said light source for emitting light of a color corresponding to the display data.

6. The display device of claim 1, wherein an irradiation region of light to be incident on said optical switching element is divided, and said display device comprises a control unit for controlling, based on display data in each divided region, ON/OFF of said light source for emitting light of a color corresponding to the display data.

7. The display device of claim 1, further comprising

a stopping unit for stopping scanning on said optical switching element when said light source for emitting light of a color corresponding to display data is turned off.

8. The display device of claim 1, wherein,
said optical switching element is a liquid crystal panel.

9. The display device of claim 8, wherein,
a liquid crystal material used in said liquid crystal panel is a ferroelectric liquid crystal material.

10. The display device of claim 8, wherein,
an applied voltage to said liquid crystal panel during display data writing scanning and an applied voltage to said liquid crystal panel during display data erasing scanning are equal in magnitude and opposite in polarity.

11. A field-sequential type display device for performing a display by synchronizing successive switching of lights of a plurality of colors to be incident on an optical switching element from a light source with inputting of display data of each color corresponding to an image to be displayed into said optical switching element,
wherein

an end timing of display data writing scanning on said optical switching element and a start timing of display data erasing

scanning on said optical switching element for each color do not coincide, and a relation $T_B + T_C = T_A + T_D$ is satisfied, where T_A is a time necessary for the writing scanning, T_B is a time from the end timing of writing scanning to the start timing of erasing scanning, T_C is a time necessary for the erasing scanning, and T_D is a time from the end timing of erasing scanning to a start timing of display data writing scanning on said optical switching element for the next color.

12. The display device of claim 11, wherein
the lights of a plurality of colors to be incident on said
optical switching element are red light, green light, and blue light.

13. The display device of claim 11, wherein
the lights of a plurality of colors to be incident on said
optical switching element are red light, green light, blue light, and
white light.

14. The display device of claim 11, further comprising
a control unit for controlling, based on display data,
ON/OFF of said light source for emitting light of a color
corresponding to the display data.

15. The display device of claim 11, wherein
an irradiation region of light to be incident on said optical

switching element is divided, and said display device comprises a control unit for controlling, based on display data in each divided region, ON/OFF of said light source for emitting light of a color corresponding to the display data.

16. The display device of claim 11, further comprising a stopping unit for stopping scanning on said optical switching element when said light source for emitting light of a color corresponding to display data is turned off.

17. The display device of claim 11, wherein, said optical switching element is a liquid crystal panel.

18. The display device of claim 17, wherein, a liquid crystal material used in said liquid crystal panel is a ferroelectric liquid crystal material.

19. The display device of claim 17, wherein, an applied voltage to said liquid crystal panel during display data writing scanning and an applied voltage to said liquid crystal panel during display data erasing scanning are equal in magnitude and opposite in polarity.

20. A field-sequential type display device for performing a display by synchronizing successive switching of lights of a plurality

of colors to be incident on an optical switching element from a light source with inputting of display data of each color corresponding to an image to be displayed into said optical switching element, comprising:

a light introducing unit for making light of a corresponding color from said light source incident on said optical switching element before a start timing of display data writing scanning on said optical switching element for each color; and

an interrupting unit for interrupting the incidence of light of a corresponding color from said light source on said optical switching element after an end timing of display data erasing scanning on said optical switching element for each color.

21. The display device of claim 20, wherein
the lights of a plurality of colors to be incident on said optical switching element are red light, green light, and blue light.

22. The display device of claim 20, wherein
the lights of a plurality of colors to be incident on said optical switching element are red light, green light, blue light, and white light.

23. The display device of claim 20, further comprising
a control unit for controlling, based on display data, ON/OFF of said light source for emitting light of a color

corresponding to the display data.

24. The display device of claim 20, wherein
an irradiation region of light to be incident on said optical
switching element is divided, and said display device comprises a
control unit for controlling, based on display data in each divided
region, ON/OFF of said light source for emitting light of a color
corresponding to the display data.

25. The display device of claim 20, further comprising
a stopping unit for stopping scanning on said optical
switching element when said light source for emitting light of a
color corresponding to display data is turned off.

26. The display device of claim 20, wherein,
said optical switching element is a liquid crystal panel.

27. The display device of claim 26, wherein,
a liquid crystal material used in said liquid crystal panel is
a ferroelectric liquid crystal material.

28. The display device of claim 26, wherein,
an applied voltage to said liquid crystal panel during
display data writing scanning and an applied voltage to said liquid
crystal panel during display data erasing scanning are equal in

magnitude and opposite in polarity.

29. A display method for performing a field-sequential type display by synchronizing successive switching of lights of a plurality of colors to be incident on an optical switching element from a light source with inputting of display data of each color corresponding to an image to be displayed into said optical switching element, comprising:

making light of a corresponding color from said light source incident on said optical switching element in synchronism with a start timing of display data writing scanning on said optical switching element for each color; and

interrupting the incidence of light of a corresponding color from said light source on said optical switching element in synchronism with an end timing of display data erasing scanning on said optical switching element for each color,

wherein a predetermined time is provided between an interruption timing of incidence of light of one color on said optical switching element and a start timing of incidence of light of the next color on said optical switching element.

30. A display method for performing a color display by synchronizing incidence of white light from a light source on an optical switching element having color filters of a plurality of colors with inputting of display data of each color corresponding to an

image to be displayed into said optical switching element,
comprising:

making light from said light source incident on said optical switching element in synchronism with a start timing of display data writing scanning on said optical switching element; and

interrupting the incidence of light from said light source on said optical switching element in synchronism with an end timing of display data erasing scanning on said optical switching element,

wherein a predetermined time is provided between an interruption timing of incidence of light on said optical switching element in one frame and a start timing of incidence of light on said optical switching element in the next frame.